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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

SALE PROSPECTUS

OF

National Forest Timber, Arizona
Kaibab National Forest

Opportunity for Permanent Railroad
Investment



ISSUED BY

FOREST SERVICE, OGDEN UTAH

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Sale Announcement

On January 1, 1914, the Forest Service began advertising for sale one billion feet of timber, over 80 per cent of which is Western yellow pine, located on the Kaibab National Forest, Arizona. The timber will be advertised for a period of five and one-half months, ending June 15, 1914, during which time bids will be received by the District Forester, Ogden, Utah. In the discretion of the Forester, an extension of this period until August 15 will be allowed to permit a field examination. Bids offering initial stumpage rates of less than \$2.00 per thousand feet B. M. for yellow pine and \$1.40 per thousand feet B. M. for Douglas fir, white fir and Englemann spruce will not be considered. Stumpage rates will be readjusted at the end of each five-year period of the contract. Forms for submitting bids and all other information concerning terms and procedure of sale may be obtained from the District Forester, Ogden, Utah.

LOCATION OF FOREST.

The Kaibab National Forest embraces over one million acres in Coconino County, Arizona, just north of the Grand Canyon of the Colorado River, which forms the south boundary of the Forest. The main timbered portion of the Forest is confined to the Kaibab Plateau or Buckskin Mountain, which is a high mesa ranging between 7,500 and 9,000 feet elevation. The topography is level and rolling. This region, lying in the northwestern corner of the State, is effectually cut off from the remainder of the State by the Grand Canyon of the Colorado River, one of the grandest scenic wonders of the world.

Geographically, the Kaibab Forest contributes to the northward in Utah and directly to Salt Lake City. All development of the region has been and will continue to be from the northward. The most practicable route to the Forest is from Marysvale, Utah, the present terminus of the Sanpete branch of the Denver & Rio Grande Ry. From this point the route follows the Sevier River to Panguitch and Hatchtown and then drops over a low divide onto the headwaters of the Rio Virgin River and thence to Kanab, either by Kanab Creek or Johnson Creek. From Kanab to the Kaibab Plateau is approximately 30 miles across a level stretch of sage brush land. From Marysvale to Panguitch is 53 miles; from Panguitch to Kanab, via Johnson Creek is 76 miles. This is the route followed during the past summer by the Salt Lake Tribune automobile party which established an automobile route between Salt Lake City and the Grand Canyon of the Colorado River. According to the route followed by this party, the distance from Marysvale to Bright Angel Point is approximately 200 miles. This distance, however, would be considerably reduced by a railroad.

ESTIMATED STAND AND SPECIES.

The Kaibab Forest is estimated to contain approximately two billion feet of merchantable timber. This estimate is based on an intensive field cruise made by the Forest Service. Only trees over 12 inches in diameter, 4½ feet from the ground were included in the estimate, which is known to be conservative. Checks made on the original cruise show the estimate to be 15 to 25 per cent low. Over 80 per cent of the timber is western yellow pine; the other species are Douglas fir, blue spruce, Englemann spruce and white fir.

The one billion feet of timber which the Forest Service has placed on sale embraces that naturally most accessible. Of this amount, it is estimated approximately 800,000,000 feet B. M. is western yellow pine, 70,000,000 feet B. M. is Douglas fir, 30,000,000 feet B. M. is blue spruce and Englemann spruce and 100,000,000 feet B. M. is white fir. In the yellow pine type, the number of trees per acre and the average diameter of the trees at a point 4½ feet from the ground will run about as follows:

Species.	Average Number of trees per acre.	Average Diameter of trees in inches
Yellow pine	23.5	20" to 24"
Douglas fir .....	.6	16" to 18"
White fir	1.3	16" to 20"
Spruce .....	.5	18" to 20"

In the mixed type, as follows:

Species.	Average Number of trees per acre.	Average Diameter of trees in inches
Yellow pine	9.4	18" to 24"
Douglas fir	3.3	18" to 22"
White fir	5.4	16" to 22"
Spruce	4.3	16" to 20"

The common maximum diameter of the yellow pine is about 42 inches, although occasional trees with a diameter breast high of 60 inches occur. The other species run up to 40 inches in diameter. In the yellow pine type the average stand per acre is about 7,000 feet B. M., and in the mixed type about 6,000 feet B. M. per acre.

LOGGING CONDITIONS.

In view of the fact that the timbered portion of the Forest embraces a rolling plateau, logging conditions are ideal. Logging roads can be construed almost anywhere at very small cost. The rolling nature of the plateau will be an assistance to logging and there will be practically no rough mountain logging. There are numerous open parks in the Forest, offering excellent camp sites and there are sufficient springs available for camp and logging purposes.

Owing to the favorable topography of the region, actual logging costs will be low. Forest Service lumbermen estimate that the average costs will be about as follows:

	Per M feet.
Cutting and felling.....	\$0.75
Brush disposal .....	.15
Felling snags .....	.03
Skidding .....	.75
Hauling	1.50
Road construction .....	.03
Camp construction .....	.01
Spotting and loading cars.....	.50
Unloading at mill.....	.12
Administration .....	.10
Freight to mill.....	2.00
Interest on working capital.....	.18
Depreciation and interest on logging equipment.....	.22
Total	\$6.34

Climatic conditions are also favorable to logging on the Kaibab Plateau. It is a region of long dry summers, rarely interrupted by storms sufficient to stop operations in the woods. The summer logging season begins about the first of May and continues until December. In some years the season will extend well into January. During the summer season there are few rains and the roads remain hard and dry and always in good condition. During many winters, hauling logs on sleds is entirely practicable, although this method of logging cannot always be relied upon, since winters occur when the snow fall is too light.

There are no experienced lumber jacks in the Kaibab region, although across the Grand Canyon to the south extensive lumbering operations are carried on in a region similar in topography and timber and probably some labor could be secured here. A large company operating on the Kaibab would better import experienced lumber jacks, even though a great deal of local labor is available. Teams, hay, grain, meats and vegetables necessary in logging and milling could be obtained locally.

The Forest is well equipped with telephone lines. The Forest Service has constructed a line from Kanab to Ryan, Jacob's Lake, Big Park, Quaking Asp and Bright Angel Point, thus giving adequate communication with all parts of the Forest and with the outside country.

ACCESSIBILITY.

The timber on the Kaibab Forest can be made accessible for marketing only by the construction of a railroad which will serve as a transportation outlet for the manufactured lumber. It will remain inaccessible until such a railroad is built. The construction of a railroad and the exploitation of the timber have, therefore, been considered inter-dependent and the business point of view taken that the practicability of the project is determined by the return which may be expected upon the total investment required in railroad construction and in lumbering operations. In working out this problem, the construction of a railroad not only to handle the timber, but to serve also as a common carrier to the Southern Utah country has been figured upon. The idea has been to make available an amount of timber, which together with other local traffic which the region now offers, will assure a profitable return on the entire investment necessary.

LOCAL DEVELOPMENT.

A railroad connecting the Grand Canyon of the Colorado River and Southern Utah with Salt Lake City has many local inducements, aside from timber, to justify its consideration. Such a road will tap a region of 15 million acres, exceedingly rich in natural resources, but entirely lacking railroad transportation. Over four million acres of this region have been appropriated and 365,352 acres just recently entered under the enlarged Homestead Act. The principal industries and natural resources of the region are sheep and cattle raising, farming; coal, copper, iron, timber, oil, extensive agricultural lands, and alunite. One of the largest coal fields in the State is found in Iron, Washington, Kane and Garfield Counties. It would be directly tapped by a railroad to the Kaibab Forest.

Compared to the total area of the region, the amount of agricultural land actually under cultivation is not great, although there has been a big increase in the last few years due to a number of reclamation projects (State and private) at the head of the Sevier River, near Panguitch, Orderville, Kanab, Alton and on Johnson Creek. A railroad into this region would result, it seems certain, in the speedy development of several million acres of land admirably suited to farming and fruit raising. It should further develop immediately much activity in mining, particularly of coal, copper and iron, which cannot now be worked profitably owing to lack of transportation facilities.

Another feature of the region that will furnish a railroad much traffic is the Grand Canyon of the Colorado River, which will draw thousands of tourists each year. The scenic beauty of the Grand Canyon is admittedly unsurpassed, while the approach to the Canyon through the Kaibab Forest, which is called the most beautiful natural forest in the world, offers unexcelled opportunities for one of the most wonderful tourist resorts in the country. With a direct railroad route between Salt Lake and the Grand Canyon, the assured tourist traffic would be a large item of revenue.

RAILROAD CONSTRUCTION.

There are several practical railroad routes to the Grand Canyon from the north. The one used as a basis by the Forest Service in determining the feasibility of marketing the Kaibab timber is from Marysvale, the present terminus of the Denver & Rio Grande Ry., via Junction, Panguitch, Hatchtown, Ranch, Johnson Creek and Kanab. The total distance figured upon from Marysvale to Bright Angel Point is 200 miles with 25 miles addition for logging spurs. This route involves no difficult engineering problems and for much of the distance construction costs will be exceedingly low. It is estimated that the total cost of the road proposed will approximate \$2,720,000. This estimate is low as applied to a modern equipped standard gauge road. The estimate, however, is based on constructing a road which will be capable of handling the timber and available local traffic efficiently, with the idea of improving it as the traffic and carrying capacity increases. Many of the best paying roads in the country have been built in this manner.

ESTIMATED RETURNS.

In estimating the returns to be expected, the combined investments necessary for railroad construction and logging operations of 40 million feet per annum, have been taken. The traffic derived from logs and lumber can be computed quite accurately, but that to be obtained from other sources is estimated on the basis of the present development and producing capacity of the region.

TOTAL INITIAL INVESTMENT.

Railroad construction and equipment.....	\$2,716,484
Mill construction, logging equipment and working capital.....	603,000
Total	<u>\$3,319,484</u>

ESTIMATED ANNUAL RETURN.

Local Traffic.

	Tons.
(1) Hay, grain, fruit and other farm produce.....	10,000
(2) Sheep, horses, cattle, wool and hides.....	25,000
(3) Inbound general merchandise.....	20,000
Total	<u>55,000</u>

The average freight rate figured on in handling the above tonnage is \$2.50 per ton. Therefore:

Items (1), (2) and (3), 55,000 tons at \$2.50 per ton.....	\$137,500
Passenger and tourist traffic.....	150,000
Mail and express.....	20,000
Telephone and Telegraph receipts.....	5,000
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Total gross earning per above.....	\$312,500
Operating expenses on above traffic 60%.....	187,500
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Total net earning on above traffic.....	\$125,000
Net profit on logs and lumber :	
32,400 M feet @ \$6.67 per M.....	216,108
7,600 M feet @ \$6.32 per M.....	48,032
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Total earnings above operating cost.....	\$389,140
Deduct interest on R. R. investment (6% on \$2,716,484).....	162,157
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Total net earnings	\$226,983

The above earnings represent an annual return of 12 4-5 per cent on the total investment of \$3,319,000. This percentage includes depreciation on the railroad. The railroad will, however, increase in value from year to year as the country is developed. Maintenance is included under operating expenses. Interest, depreciation and maintenance on all lumbering investments has been charged off against stumpage.

STUMPAGE APPRAISALS.

In appraising the Kaibab timber, an effort has been made to fix stumpage rates at a figure which will assure the operator a fair return upon his total investment in lumbering and railroad construction, taking into consideration, of course, the returns which may be expected from other sources. The timbered area was divided into five compartments and the average cost of the logs at the mill from each of the compartments determined. The average cost of milling and transporting lumber from the mill to Marysvale was then estimated as closely as possible and the total conversion cost per M feet at Marysvale deducted from the average wholesale selling price which will be

received at that point. These estimates were made by Forest Service lumbermen after a careful study of logging, milling and transportation problems on the ground. The summarized estimates are given below:

LOGGING.

	—Logs per M feet—	
	Yellow pine.	Other Species.
Average cost of logging.....	\$3.94	\$3.94
Transportation by rail to mill.....	2.00	2.00
Interest on working capital.....	.18	.18
Depreciation and interest.....	.22	.22

MILLING.

Average cost of milling.....	5.20	3.66
Interest on working capital.....	.09	.06
Transportation to Marysvale.....	.75	.75
Mill Depreciation10	.10
Interest on mill investment.....	.15	.15
Milling overrun62	.47
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Total conversion costs.....	\$13.25	\$11.53
Average selling price at Marysvale.....	21.92	19.25
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Difference cost and selling price.....	\$8.67	\$7.72
Stumpage value	2.00	1.40
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Operator's profit	\$6.67	\$6.32

The profit per thousand feet as shown above is equivalent to a total annual net return from the lumbering operations of \$264,140 above all interest charges on milling and logging investments and working capital. The above profit is actually earned, however, by the combined lumbering and railroad investment. The charges for hauling logs from woods to mill and lumber from mill to Marysvale is placed at the actual operating cost. Of the above profit, therefore, the railroad should be credited (on the basis of an equitable freight rate) with \$1.84 per M profit on the log haul and \$0.61 per M profit on the lumber haul or a total annual profit on handling logs and lumber of \$100,140. The net profit on the lumbering operation would then be \$4.10 per M feet, or \$164,000 annually. As applied to the entire investment, the total profits indicate a return of 12 4-5 per cent.

MILL SITES.

The scarcity of water on the Kaibab Plateau makes questionable the feasibility of locating a large mill on the Forest. While the supply of water on the Forest is sufficient for logging purposes, enough water for a large mill would have to be developed. The proposed plan of operations as figured upon, however, is based on the location of a mill at McDonald's ranch at the headwaters of a branch of the Rio Virgin River. At this point there would be plenty of water available for a log pond and all other mill needs. The one disadvantage to this site is the long log haul involved. This would be approximately 90 miles from the timber to the mill. Several other sites off the Forest are available and the location of a mill to handle this timber is, of course, a matter in which the purchaser can use his own judgment. An excellent mill site could doubtless be obtained in the vicinity of the Hatchtown reservoir, but this site would involve a still longer log haul. Doubtless a satisfactory mill site might also be obtained on Kanab Creek, although practically all of the water in this creek is appropriated.

LUMBER MARKETS.

The timber from the Kaibab Forest will contribute directly to the large and rapidly increasing lumber markets of Utah, western Colorado and Wyoming. This market can easily consume all of the annual cut of the lumber manufactured from the Forest, although an operator would desire to ship east a large per cent of the upper grades for which fancy prices can be obtained. At the present time eastern Oregon operators are shipping upper grades of western yellow pine as far east as New York and Boston.

The annual consumption of timber in Utah during 1912 was approximately 205,000,000 feet board measure. This estimate is based on an extensive investigation made by the Forest Service during the spring of 1913. Of the total consumption only about 10,000,000 feet are produced locally by small mills cutting almost exclusively for ranch and farm trade. There are no large mills in Utah and the small mills which manufacture rough lumber only cannot compete in the main consuming cities with the well manufactured and closely graded lumber imported from the large mills in Oregon and on the Coast. The opportunity for a large mill in Utah is therefore unexcelled since it would have a large market close at hand and a great advantage in freight rates over present competing mills.

Salt Lake City is the logical distributing point for a large timber operation on the Kaibab Forest. The city is situated in the center of the most fertile and densely populated portion of the region and is well equipped with railroads radiating in all directions. At the rate of present development the future possibilities of the Utah market seem unlimited. The population increased approximately 40 per cent during the past 10 years and in the past few

years there has been a wonderful development in the way of settlement, reclamation of arid lands and the generation of electric power. The present rate of increase may be depended upon for several decades, as only a small per cent of the available land and natural resources of the State have been developed.

On the basis of the grades which can be obtained from the Kaibab timber it was estimated that the average wholesale price which yellow pine will bring on the Salt Lake market is approximately \$23.40 per M feet, log scale. This average price is based on a grade production of 10% better than No. 1 common, 10 % No. 1 common, 25% No. 2 common and 55% No. 3 common. This estimate of grades is very conservative considering the class of timber involved. The average wholesale selling price at Marysvale used in the stumpage appraisal is determined by discounting the average wholesale selling price at Salt Lake by the freight rate from Marysvale to Salt Lake City.

FIELD EXAMINATION AND SAMPLE MARKING.

The object of advertising the Kaibab timber for a period of 5½ months, with a possible extension of this period of two months, is to allow interested parties ample time to examine the timber on the ground and make a thorough investigation of all conditions bearing upon the proposition. Beginning with April an examination of the timber can be made with little difficulty, and an investigation of the proposed railroad route is possible during practically any month of the year. In case interested parties desire to make an examination of the timber the Forest Service will lend them such assistance as is proper, and will demonstrate to them on the ground the method of marking, which will be followed in designating the timber to be cut. This is desirable in order that applicants may have a clear idea of the timber to be cut and may base their estimates accordingly.

SALE PROCEDURE.

The advertising period for this sale will close on June 15, 1914, unless extended by the Forester because of a bona fide application to permit a field examination. All bids must have been submitted prior to this date or prior to August 15 in case of an extension, and each bid must be accompanied by a deposit of \$10,000, made payable to the First National Bank (United States depository), Ogden, Utah. On the day following the final date for receiving bids the District Forester will open all bids received and will award the sale provisionally on the basis of the best terms offered, subject to the submission of a financial showing satisfactory to the Forester.

It will be required in this showing that at least 20 per cent of the capital needed in the construction of the mill and for conducting the logging business

must be subscribed by substantial men who are to be identified with the management of the business. The finances secured for the railroad or the plan which will be followed in securing finances must also be shown. If the railroad is to be operated by a separate corporation, copies of the contract or contracts which will be effective between the railroad and lumber companies covering the transportation of logs, lumber and other products will be necessary.

After the sale has been awarded the formal contract and bond are sent to the successful bidder for execution. After these papers have been properly executed and approved by the Forester, cutting operations are allowed to begin at any time. The deposit required with the bid applies to the first payment for stumpage in the case of the successful bidder. In the case of unsuccessful bidders this deposit is refunded. If the successful bidder fails to execute the contract in the time required ten percent of the deposit may be retained as forfeit. Payment for stumpage will not be required in one sum but will be made by specified deposits made from time to time during the contract period as the timber is cut. The policy is to have the operator deposit a sum sufficient to cover the timber to be cut during the following three months. As soon as this deposit has been exhausted another payment on the same basis is called for, and so on. Under this plan the operator never has a large amount of money tied up in stumpage.

DETAILED REPORT AVAILABLE:

A report giving detailed information with maps of logging and timber conditions, timber estimates, estimated cost of railroad construction, stumpage appraisals, mill sites, markets, etc., will be furnished to parties interested in this sale by the District Forester at Ogden, Utah. Copies of the sale advertisement, together with necessary forms for submitting bids, will also be furnished upon request.

MAIN FEATURES OF CONTRACT.

The contract which will be given for the one billion feet of timber to be sold will allow a period of 25 years for the cutting and removal of this timber with three years additional time at the outset for the construction of the railroad necessary to market it. The 25 year period for the removal of the timber will begin January 1, 1918, unless railroad construction has been completed or the cutting of timber begins prior to that date, in which event the period will begin with the date on which cutting for sale is initiated. In no event however, is this date to be later than January 1, 1918.

The minimum initial stumpage rates are \$2.00 per M feet for yellow pine and \$1.40 per M feet for other species. Under the terms of the contract the initial rates are to be readjusted at the termination of each five year period,



View showing characteristic topography and open stand of Western Yellow Pine, Kaibab Plateau



The above view indicates the heavier stands of yellow pine on the Kaibab National Forest. This stretch of timber averages over 30,000 feet per acre.



Cruisers' camp in Western Yellow Pine Timber, Kaibab National Forest.
View illustrates easy logging condition



One of the thousands of views from the rim of the Kaibab Plateau, Kaibab National Forest

this readjustment to be based upon actual increases in the wholesale selling price of lumber of grades and species similar to those produced from the Kaibab timber. A readjustment will also be made or extension of time granted upon written application of the purchaser showing the existence of a serious emergency arising from changes in the market conditions which make operations at a profit impossible.

As a guarantee of the faithful performance of the conditions of the contract, a bond in the sum of \$50,000 will be required. Payments for stumpage must be made in advance in deposits of \$10,000 each as the timber is cut. The contract provides that approximately 60% of the merchantable live timber 12 inches and over in diameter breast high will be marked for cutting by the forest officers. It further specifies merchantable timber to be green yellow pine sawlogs which scale at least $33\frac{1}{3}$ per cent of sound material, and sawlogs of other species and all dead timber which scale at least 50 per cent of sound material. The timber is scaled by the Scribner Decimal C log rule and the scaling is done by men furnished by the Forest Service. Copies of scale reports are furnished the operator at the end of each week.

ADVANTAGES OF GOVERNMENT CONTRACTS.

The handling of National Forest timber has certain advantages to an operator over the purchase of privately owned timber. These advantages may be summarized as follows:

1. **The Absence of Carrying Charges.** The payment of a sum covering the cut proposed during a period of about three months only is required in advance, thereby doing away with heavy interest charges on money tied up in stumpage.

2. **A Limited Investment.** In operating in National Forest timber no investment is necessary for land and other permits so long as all branches of the operation are on National Forest land. The investment necessary, therefore, is limited practically to the cost of logging equipment, milling plant, stream improvement or railroad construction, and working capital.

3. **Fire Risk Reduced to a Minimum.** Government patrol virtually eliminates danger from forest fires. The Government bears all the losses on standing timber on the sale area except where it is shown that this loss was the direct result of carelessness on the part of the purchaser.

4. **No Logged-over Land to Hold.** Purchasers do not have to protect or pay taxes on cut-over area.

5. **No Land or Timber Taxes.** Purchasers do not have to pay land or timber taxes in handling National Forest timber.

6. **No Skinning of Land Necessary.** The Government's methods of marking timber for cutting increases the value of stumpage to an operator by permitting the logging of the largest trees.

January 1, 1938, and the remaining timber included in the contract prior to the final date as determined under this section.

8. Tops will be lopped and all brush piled compactly away from the living trees or otherwise disposed of as directed by the Forest Officer in charge of the sale. If, in the judgment of the Forest Supervisor, all or any part of said brush should be piled and burned, we agree to furnish a sufficient number of men yearly free of charge to burn said brush in such manner and at such times as the Forest Supervisor shall prescribe.

9. Samples of marking showing what timber will be designated for cutting have been examined and accepted as indicating the system of cutting to be followed on the sale area. It is agreed that the sale includes all of the merchantable dead timber standing or down and not less than 66 2-3 per cent of the total merchantable stand of live timber on the area cut over. This percentage will be marked for cutting by the Forest Officer in charge, such percentage to be distributed among the various species as the Forest Officer in charge shall determine, in accordance with the principles followed in the sample marking. It is understood that the Forest Officer in charge may vary the marking to provide for a very light cutting or for no cutting at all upon areas adjacent to scenic roads and points. It is understood, however, that a total of at least 60 per cent of the merchantable live timber will be marked for cutting upon the entire sale area.

10. In order to check the spread of forest tree diseases and to eliminate snags, which constitute a fire menace, we agree to cut all trees or snags marked upon the sale, whether merchantable or apparently unmerchantable. Such trees or snags after felling shall be opened up sufficiently to satisfy the Forest Officer in charge of their condition, and any portions thereof which are merchantable within the meaning of this agreement, as specified in Clause 15, shall be removed, scaled and paid for.

11. This agreement contemplates logging in the woods by means of horses, which is the ordinary mode of logging in practice in the region in which the area covered in this agreement is located. Steam donkey engines may, however, be used for hauling in logs by means of chutes, slides or pole roads, or for hauling logs in the bottom of draws, but their use for yarding or skidding, or the employment of any other method of logging will be allowed only with the consent of the Forester and under such conditions and restrictions as he may require.

12. Any material cut and removed for sale not covered by the provisions of clause 15 hereof shall be scaled, measured or counted, as the Forester shall prescribe; converted into board measure log scale in accordance with the ratio determined by the Forester, which shall conform with the current practice of the Forest Service; and paid for in accordance with the established rate for such species until or unless a special rate upon such material is established by the Forester upon application of the purchaser.

13. All cutting will be done with the saw when possible. Stumps will

be cut so as to cause the least possible waste and not higher than 18 inches on the side adjacent to the highest ground, except in unusual cases when, in the discretion of the Forest Officer, this height is not considered practicable; all trees will be utilized to as low a diameter in the tops as possible, so as to cause the least waste, and to a minimum diameter of 8 inches when merchantable in the judgment of the Forest Officer; the log lengths will be varied so as to make this possible.

14. All marked or designated trees will be cut. No live timber will be cut except that marked or otherwise designated. All dead timber sound enough for lumber of any merchantable grade will be cut from the areas specified. Dead timber will be cut only from such specified areas. No timber will be cut until paid for, or removed until scaled, measured or counted by a Forest Officer. The title to all timber included in this agreement will remain in the United States until it has been paid for and scaled, measured or counted, as herein provided.

15. Yellow pine saw logs, which scale at least $33\frac{1}{3}$ per cent of sound material, and saw logs of the other species and all dead timber, including yellow pine, which scale at least 50 per cent of sound material shall be considered merchantable under the terms of this contract. Provided, that the term "sound material" as herein used includes only standard merchantable lumber grades recognized by the trade in Utah.

16. So far as may be necessary for the protection of National Forest interests, the plan of logging operations on the respective portions of the sale area will be approved by the Forest Officer in charge. When operations are begun on any natural logging area, the cutting on that area shall be fully completed to the satisfaction of the Forest Officer in charge before cutting may begin on any other areas, unless written permission is given by the Forest Officer in charge to begin cutting on a different area, with the understanding that as soon as conditions warrant it cutting will be resumed on the area left incomplete. After decision in writing by the Forest Officer in charge that the purchaser has complied satisfactorily with the contract requirements as to specified areas, the purchaser shall not be required to move back upon or do additional work on such areas.

17. All locomotives, donkey engines or other steam power engines used in connection with this sale, on or adjacent to National Forest land, shall during the period from May 1 to November 1 each be equipped with an efficient spark arrester which is satisfactory to the Forest Supervisor, a steam pump with not less than 1 inch discharge, 150 feet of fire hose, six buckets and a constant supply of the equivalent of six barrels of water; all such equipment to be suitable and available for fire-fighting purposes. During the same period of each year no donkey engine or other similar steam contrivances in actual use shall be left during the noon hour without a watchman, and, if necessary in the judgment of the Forest Supervisor, the purchaser may be required to

have a night watchman guard against the escape of fire from the logging engines.

18. Timber will be scaled by the Scribner Decimal C log rule. The maximum scaling length of all logs shall be 16 feet, greater lengths will be scaled as two or more logs. Upon logs less than 24 inches in diameter at the small end, 4 inches additional length, and on logs more than 24 inches at the small end, 6 inches additional length, will be allowed for trimming. Logs overrunning the specified length will be scaled as one foot longer. So far as practicable logs will be decked and piled for scaling as directed by the Forest Officer in charge. Copies or abstracts of the scale reports will be furnished to the purchaser weekly after they have been approved by the Supervisor.

19. The right to turpentine any of the timber included in this sale is reserved by the United States. The turpentine rights may be leased by the United States during the contract period; provided, that operators under such leases will not interfere with the logging operations conducted by the purchasers, and that any lease made by the United States will not permit the boxing of timber. It is further agreed that turpentineing will not be permitted if it injures the quality of the timber in the trees tapped, and that the United States will, as far as consistent with the laws and regulations of the Department of Agriculture, give the purchaser of the timber the preference in awarding turpentine rights at the highest price for such privileges which may be offered following advertisement.

20. Unmarked or undesignated living trees which are cut or injured through carelessness; marked or designated trees or merchantable dead timber left uncut; timber wasted in tops, stumps and partially sound logs; trees left lodged in the process of felling, and any timber merchantable according to the terms of this agreement which is cut and not removed from any portion of the cutting area when logging on that portion of the cutting area is completed, or is not removed from the National Forest before the expiration of this agreement, will be scaled, measured or counted and paid for at double the prices herein specified. Any timber remaining on the sale area at the expiration of this agreement, for which payment at double the price herein specified has been made to the United States, may be removed within three months from such date of expiration.

21. Unmerchantable dead timber used in the construction of railroads, temporary logging and skidding roads, chutes, flumes, camps and other temporary improvements shall be allowed free of charge, but where merchantable green or dead timber is used for the purposes named it shall be scaled and charged for at the stumpage rates in effect under the terms of this contract at the time such material is cut. All improvements shall be removed from the National Forest lands within six months after the termination of this agreement unless permits or easements are secured from the officer of the United States having jurisdiction in accordance with the Federal laws for their occupancy and use. If not removed within such time of further occu-

pany and use under such permits or easements authorized, they shall become the property of the United States.

22. During the time that this agreement remains in force we will, independently, do all in our power to prevent and suppress forest fires on the sale area and in its vicinity, and we will require our employees and contractors to do likewise. We hereby agree, unless prevented by circumstances over which we have no control, to place ourselves and our employees at the disposal of any authorized Forest Officer for the purpose of fighting forest fires, with the understanding that if the fire does not threaten our property or the area embraced in this agreement we shall be paid for services so rendered at the rate or rates to be determined by the Forest Officer in charge, which rate or rates shall correspond to the rate or rates of pay prevailing in the Kaibab National Forest for services of a similar character at the time the services are rendered, provided, however, that if we, our employees, contractors or employees of contractors, are directly or indirectly responsible for the origin of the fire, we will not be paid for services so rendered.

23. We agree to pay for all timber cut prior to February 1, 1923, at the rates of \$2.00 per M feet B. M. for western yellow pine and \$1.40 per M feet B. M. for Douglas fir, Englemann spruce, blue spruce and white fir, and for all merchantable dead timber on the sale area; all timber cut on and subsequent to February 1, 1923, and prior to February 1, 1928, at such rates as shall be designated by the Forester on February 1, 1923; all timber cut on and subsequent to February 1, 1928, and prior to February 1, 1933, at such rates as shall be designated by the Forester on February 1, 1928; all timber cut on and subsequent to February 1, 1933, and prior to February 1, 1938, at such rates as shall be designated by the Forester on February 1, 1933, and for all timber cut on and subsequent to February 1, 1938, at such rates as shall be designated by the Forester on that date; provided that the rates to be designated upon each of the respective dates designated above shall be determined as follows:

(a) For the purpose of this contract it is agreed that the average mill run lumber prices per M feet B. M. prevailing at the execution hereto, f. o. b. cars at mill points in southern Utah are \$19.00 for yellow pine and \$16.75 for Douglas fir, Englemann spruce, blue spruce and white fir.

(b) On December 1, 1922; December 1, 1927; December 1, 1932, and December 1, 1937, the company agrees to furnish the Forester with a statement, the accuracy of which shall be properly sworn to, showing for each of the five preceding years during which it has operated under this contract the average mill run lumber price received for the various species cut from the sale area hereinbefore described. If the average mill run selling price for any species for the two years immediately preceding February 1, 1923; the two years immediately preceding February 1, 1928; the two years immediately preceding February 1, 1933, and the two years immediately preceding February 1, 1938, shows an increase over the price

of the same species as agreed upon before as prevailing at the date of execution hereto, not more than 75 per cent of the amount of such increase may in the discretion of the Forester be added to the stumpage rate for such species as fixed on the following February 1; provided, that said statement furnished by the company shall have been determined by the Forester to be a fair and correct representation of prices prevailing for the years reported. In the event that said statements are found by the Forester to be an incorrect representation of prevailing prices, then the readjustment of stumpage rates on the dates fixed shall be made as provided above, except that instead of accepting the company's statements of prices, said readjustment will be based on the average increase in the wholesale selling price of lumber prevailing throughout southern Utah during the period specified, as determined and shown to be fair and equitable by the Forester; it being understood and agreed that if during the life of this contract average mill run selling prices become available from other large mills in southern Utah for operations and species similar in character to those provided for in this agreement, said average mill run selling prices may be used by the Forester to check the statements furnished by the purchaser, or in the event the purchaser's statements are found to be an incorrect representation of prevailing prices, to determine the actual increase in lumber prices, proper consideration being given to freight rates throughout the territory considered.

(c) If during the life of this agreement certain of the material cut from any of the species included in this sale is manufactured into or sold for other products than lumber, the market value of such products and the proportion of the total cut of the species so used, in the territory above defined during the two calendar years preceding the next readjustment date, shall be considered by the Forester, upon an equitable basis comparable to the thousand board feet of manufactured lumber, in determining the average mill run price of the species as above specified; provided, that the Forester may at any time, upon application from the purchaser, establish a special rate for material other than saw timber which the purchaser selects to remove for sale, which rate shall be equitable in accordance with the current market value of such material.

(d) It is further agreed that the Secretary of Agriculture will, upon written application from the purchaser, setting forth good and sufficient reasons therefor and showing the existence of a serious emergency arising from changes in market conditions since the last readjustment of stumpage rates, at his option either (1) redetermine and establish the stumpage rates and designate a date when the rates as redetermined shall be effective, which date shall be within six months of the date of application, or (2) grant an extension of time within which the respective amounts of timber specified in clause 7 shall be removed, not to exceed the total period of 25 years for the removal of the timber specified in this

contract, when action of either character is necessary in his judgment to relieve the purchaser from hardship; provided, that in all cases the stumpage rates as readjusted upon application to the Secretary shall be determined in accordance with the methods and under the terms above set forth; and provided further, that the stumpage rates so determined upon application of the purchaser shall apply only during the remainder of the cutting period then current, at the termination of which the stumpage rates shall be regularly redetermined and established.

In the application of the foregoing clause it is understood that the Secretary of Agriculture will readjust the stumpage rates upon application from the purchaser if it is shown to his satisfaction that for a period of one year market conditions have not permitted operations by the purchaser at a profit above operating costs, including office and supervisory expenses, interest, taxes, insurance and reasonable charges for the depreciation and maintenance of the plant.

(e) It is further agreed that in no event will the stumpage rates as established upon any of the respective dates above named or upon the application of the purchaser be less than those specified herein to be paid for timber cut prior to February 1, 1923.

(f) It is further agreed that in making any readjustment of stumpage prices, the Forester may require such modification in the clauses numbered 8, 9, 13, 15, 17 and 22 in this agreement as are necessary in his judgment to protect the interests of the United States; provided, that such modifications shall be limited to requirements contained in current timber sale contracts executed by purchasers and approved by officers of the Forest Service prior to the date of such readjustment; and provided also, that any additional operating costs entailed by such modifications, as ascertained by the Forester, shall be deducted from the readjusted stumpage prices.

24. We agree as part of the consideration of this contract that all main railroad lines (exclusive of temporary branches and logging spurs) shall be common carriers, in accordance with the laws of the States of Arizona and Utah: Provided, that in any question as to what portion of the railroad lines constructed are main line railroads under this clause the decision of the Forester shall be final. It is understood that this provision applies to no portion of the railroad system constructed after such portion has ceased to be used or operated in connection with this sale.

25. Camps, buildings, roads and all other improvements and structures necessary in the conduct of logging operations will be located and operated as agreed upon with the Forest Officer in charge. We agree that for all railroad lines constructed by us on National Forest land (excepting temporary spurs used exclusively for logging under this contract) we will execute such stipulations as shall be required by the Forester: Provided, said stipulations shall

conform to the regulations of the Secretary of Agriculture in effect at the time of the execution of said stipulations. It is understood and agreed that unless prohibited by law, or contrary to public policy, permits will be issued at the termination of this contract for all railroads and other improvements that are or are to be used in connection with timber operations tributary to this railroad or to its extensions.

26. No Member of or Delegate to Congress, or Resident Commissioner, after his election or appointment, and either before or after he has qualified, and during his continuance in office, will be admitted to any share or part of this contract or agreement, or to any benefit to arise thereupon. Nothing, however, herein contained will be construed to extend to any incorporated company, where such contract or agreement is made for the general benefit of such incorporation or company. (Section 3741, Revised Statutes, and Sections 114-116, Act of March 4, 1909.)

27. This agreement will not be assigned in whole or in part.

28. The conditions of the sale are completely set forth in this agreement, and none of its terms can be varied or modified except in writing by the Forester. No other Forest Officer has been or will be given authority for this purpose.

29. And as a further guarantee of a faithful performance of the conditions of this agreement, we deliver herewith a bond in the sum of \$50,000 and do further agree that all moneys paid under this agreement will, upon failure on our part to fulfill all and singular the conditions and requirements herein set forth, or made a part hereof, be retained by the United States to be applied as far as may be to the satisfaction of our obligations assumed hereunder.

Signed in duplicate this.....day of....., 19.....

Witnesses:

.....

Approved at, under the above conditions,
....., 191.....

.....
Forester.



Map

Showing Location of KAIBAB NATIONAL FOREST and Grand Canyon of the Colorado River with respect to Salt Lake City, Ogden and central Utah. Proposed route of new railroad from Marysvale to Bright Angel Point; sawmill site at Ranch, Utah and log and lumber haul from the Forest to the mill and to markets of central Utah.

June 1913

- Kaibab National Forest.
- Proposed Railway from Marysvale Utah to Bright Angel Point (Grand Canyon) Arizona.
- ▲ Proposed Millsite at Ranch.
- /// Extensive Coal outcrop.
- Timber land on Sevier National Forest for sale to proposed Railroad.
- Reclamation projects constructed and in course of construction.
- Organized Mining Districts.

